Update 2006, Issue 3
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Colors and Cosmetics at the Centennial

by Suzanne White Junod, Ph.D.

Colors

The earliest food colors were natural but expensive spices such as tumeric, paprika, and saffron. In 1856, however, an English chemist, William Perkin, extracted the first of the organic dyes, aniline (a purple or mauve color) from coal tar. By the early 20th century, synthetic organic colors had taken over the textile industry and were being used in smaller amounts in some food products. A boon for food processors, organic colors were more vivid and stable and helped account for the growing popularity of margarine, a byproduct of the meat packing industry.

Although there was controversy prior to passage of the 1906 Pure Food and Drugs Act over the safety and suitability of "dyed" foods, the consensus—*embraced* by some, *satirized* by others, and grudgingly accepted (*endured*) by most—was that foods such as catsup, pickles, maraschino cherries, margarine, colas, and candy, simply would not be recognizable, much less appetizing, without their customary tints. Besides, most of these colors were used in small amounts or comprised a very small percentage of most people's diets.

A FRIEND IN NEED.

JACK—"Your friend, Miss Anteek, lost her 'ruddy complexion' on her first visit to the seashore, didn't she?"

MAY—"Yes; but I'll warrant she got it back again on her first visit to the drug-store."

A Friend in Need (47 JUDGE no. 1203 (Nov. 5, 1904)).—Speculation as to the source of the "roses" in a friend's cheeks, as seen in this exchange, carried the implicit acknowledgement that such subtly applied cosmetics were socially acceptable. The next generation, however, with their flamboyant flapper (female) and corsair (male) attire, flaunted their "makeup."

Dr. Junod is a member of FDLI and a Historian with the Food and Drug Administration (FDA), Rockville, MD. The opinions expressed are her own and not those of FDA.

Our Mutual Friend (16 Puck no. 409 (Jan. 7, 1885)).—This frontispiece is a commentary on both the medical and the moral issues presented by candy at the turn of the century prior to passage of the 1906 Act. The candy stick itself in this depiction contained economic adulterants such as glucose in place of cane sugar and chalk to whiten the product, as well as dangerous coal tar dyes including red lead and chrome yellow. Arsenic and other heavy metals in the final product were caused by the use of poorly refined coal tar colors. The 1906 Act banned the use of any "poisonous" colors in confectionary. While the "doctor" in the print opposed the dangerous colors and contaminants in the candy, the "sexton" tipping his hat represented moral opposition to the conditions under which much of this "cheap" candy was made, often in back-alley sweatshops employing women and peddled on the street by children. *Print courtesy of William Helfand.*

[*Embraced*]
The Man in the Street
60 PUCK no. 1544 (Oct. 3, 1906)

In the matter of coloring foodstuffs you should not consider the man who would eat a bottleful of catsup at a sitting.
Counsel for the Wholesale Grocers to the Pure Food Commission

A little catsup does for me;
I do not spread it on my bread.
And so, whate'er the recipe,
I like to have my catsup red.

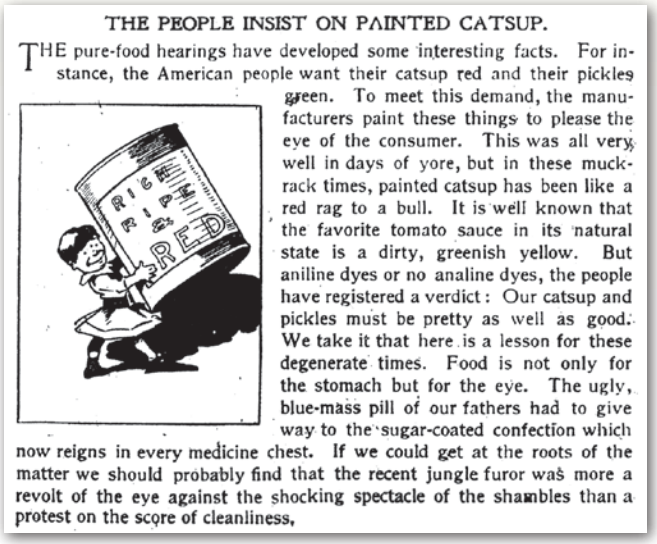
On pickles no one makes a meal;
For pickles I am not so keen.
But when I reach for them I feel
I'd like my gherkins vivid green.

String beans the same—a few will do
(or any other garden "sass")
And since I only eat a few
I want 'em greener than the grass.

I do not spread my butter thick;
It's always sparingly applied.
A little cannot make me sick,
And so I like it Diamond-dyed.

One cocktail cherry at a go
Is quite enough, I've often said.
Man wants few cherries here below,
But wants those cherries richly red.

A little poison now and then
(Especially when you go it blind)
Is relished by the best of men,
I like my foodstuffs anilined.


THE PEOPLE INSIST ON PAINTED CATSUP.

THE pure-food hearings have developed some interesting facts. For instance, the American people want their catsup red and their pickles green. To meet this demand, the manufacturers paint these things to please the eye of the consumer. This was all very well in days of yore, but in these muckrack times, painted catsup has been like a red rag to a bull. It is well known that the favorite tomato sauce in its natural state is a dirty, greenish yellow. But aniline dyes or no analine dyes, the people have registered a verdict: Our catsup and pickles must be pretty as well as good. We take it that here is a lesson for these degenerate times. Food is not only for the stomach but for the eye. The ugly, blue-mass pill of our fathers had to give way to the sugar-coated confection which now reigns in every medicine chest. If we could get at the roots of the matter we should probably find that the recent jungle furor was more a revolt of the eye against the shocking spectacle of the shambles than a protest on the score of cleanliness.

[*Endured*]
The People Insist on Painted Catsup
51 PUCK no. 1303 (Oct. 6, 1906)

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[*Satirized*]
Pioneer Pure Pabulum Phalanstery
59 Puck no. 1516 (Mar. 21, 1906)

We take pleasure in announcing to our patrons that no expense has been spared in making every ingredient in our foods chemically pure. Do not go elsewhere to be poisoned. Patronize us and get honest drugs. Read list given below.

- The copperas, sodium sulphate and salicylic acid used in the preparation of our pickles have been tested by a government expert and found free of adulteration.
- Beware of cheap drugs in your catsup and tomato soup.
- The coal-tar dye and benzoic acid entering into our specially prepared products are the purest obtainable at the most reliable wholesale drug house in the country.
- Attention is called to our corn scallops. The sulphurous acid is thoroughly Tested every day, and the formaldehyde is prepared by our own private chemist.
- Bread and butter, nearly "like Mother used to make."
- Finest quality of alum, oleo, and aniline dye.
- The borax used in our canned beef we import from Arizona at our own expense. Send for our beautiful three-color calendar, showing the immense ox teams used by us in bringing this product overland.

Don't Eat Cheap and Dangerous Drugs!
Patronize the Pioneer Pure Pabulum Phalanstery!
E.M. Robinson

The 1906 Pure Food and Drugs Act mentioned colors but only to prohibit their addition to foods to conceal inferiority and to ban the use of poisonous ones in confectionary. The earliest regulations implementing the new law noted in October 1906 that the Secretary of Agriculture would determine "from time to time," the principles that would guide the use of colors. Harvey Wiley hired a consulting chemist, Dr. Bernard C. Hesse of New York City, to study the issue of food colors part-time for three months beginning in the summer of 1907. By September, Hesse had collected 90 samples of colors that had been recommended to him for use in foods. Hesse was surprised at the poor quality and high levels of impurities in almost all of the samples and recommended that Wiley began an inspection program for colors. But on this, as on so many issues, Wiley and the Board of Food and Drug Inspection soon found themselves at odds. While Wiley urged Hesse to take his time, the Board pressed for an early report. Hesse compromised by agreeing to recommend a short list of colors he considered harmless and suitable for use, but found only one firm that would certify their colors for use in foods.

Hesse recommended a list of seven colors and his recommendation became part of Food Inspection Decision (FID) 76, "Dyes, Chemicals, and Preservatives," issued on June 18, 1907. FID 76 reminded food processors that the law did not allow colors to be used to disguise damage or inferiority, and limited the use of all mineral and coal tar dyes other than the seven enumerated ones. Color manufacturers were required to issue a guaranty attesting that their dyes were what they said they were and were "free of subsidiary" products. A certificate attesting to competent testing of such dyes was required to be on file with the Secretary of Agriculture. Next, Hesse went to industry to translate these requirements into standards that could be achieved through good manufacturing practice.

Rather than meet the requirements, however, most companies opted to sell their intermediate colors to a middleman for further refinement. Only Kohnstamm began serious efforts to produce certifiable colors, refining and re-refining the colors on Hesse's list. By January 1909, the company chemists had certified batches of all seven colors, and a second company Schoelkopf, a U.S. firm, also was able to meet the requirements.

There was a problem, however, as neither company was selling enough of their certified colors to make a profit and government officials could not find a way to require food processors to purchase them. Although the 1906 law's general adulteration clause prohibited any added ingredient that would have rendered a food injurious to health, Hesse could not prove harm for more than a few coal tar dyes he

had tested in small animals, and for arsenic, which was an impurity. Most colors had not been tested at all. The Board of Food and Drug Inspection was forced to consider whether the certified color program, with its impressive gains, could be maintained. The law did not allow them to forbid non-certified colors unless they could show harm, but making the program voluntary would have gutted the new program and devastated the firms who had done the arduous work of color certification. Kohnstamm threatened to stop submitting samples for certification and return to its uncertified line if sales of the certified colors did not improve. The Board achieved a workable compromise when it issued FID 117 (without Wiley's signature). The decision implied, but did not state explicitly, that the use of colors other than certified ones would be grounds for prosecution.

> Certified dyes may be used in foods without objection by the Department of Agriculture, providing the use of the dye in food does not conceal damage or inferiority … .
>
> Uncertified coal-tar dyes are likely to contain arsenic and other poisonous material, which, when used in food, may render such food injurious to health and therefore, adulterated under the law.
>
> In all cases where foods subject to the provisions of the Food and Drugs Act of June 30, 1906, are found colored with dyes which contain either arsenic or other poisonous or deleterious ingredients which may render such foods injurious to health, the cases will be reported to the Department of Justice and prosecutions had.

This FID, one of the cleverest, established the principle of voluntary certification of coal tar colors. Sales of certified colors rose as companies in compliance began to advertise their wares and industry perceived it advantageous to comply with the government's "recommendation." In 1938, however, the Federal Food, Drug, and Cosmetic Act made the certification program for coal tar colors mandatory and created a new system of nomenclature to replace the use of technical trade names. FD&C Green #3, for example, was a certified color with a unique number in the shade of green that was certified suitable for use in foods, drugs, and cosmetics. Today, certified colors still are identified in similar fashion on the food, drug, or cosmetic product label—a testament to one of the oldest and most successful voluntary food safety initiatives undertaken by the early Bureau of Chemistry under the 1906 statute. Success has its price however. Whereas the voluntary program under the 1906 Act was free in order to encourage participation, the mandatory provisions for certification under the 1938 Act required that submitters pay all associated certification costs.

Cosmetics

In the late 19th century, cosmetics—such that they were—usually were concocted at home and were used to moisturize, even-out skin-tones, cover shiny noses, foreheads, and chins, and add a touch of color to lips and cheeks. By the turn of the 20th century, however, some of the big names in the cosmetic industry were establishing their reputations and refining their wares. The Harriet Hubbard Ayer Company was one of many companies that made its own cosmetics for sale.

Soap manufacturers expanded their business by altering formulas to change solid soaps into liquid lotions and cream emulsions. Helena Rubenstein, a Polish immigrant with flawless skin, capitalized on her natural endowment by selling creams, hiring female attendants to attend to clients, and opening beauty salons to cater to wealthy clientele. By 1912, she had salons abroad, but moved to New York in 1915 and established her base there. Similarly, her competitor Elizabeth Arden opened her "red door" salon in New York during the same period, serving similarly wealthy clientele.

Another major name in cosmetics—and the lone male—was Max Factor, a Russian immigrant. Factor made his name and fortune in Hollywood, establishing himself as wigmaker and cosmetic artist to the stars. He adapted stage makeup to new conditions in the theatre. He developed a grease-based makeup that was lighter and did not crack, which allowed silent film comedians a broader range of facial expression. He invented the powder "puff," false eyelashes, and theatrical makeup kits. He did not cater solely to exclusive clientele as did his female competitors. Making product lines available in drug stores made them more accessible to the middle class and, in fact, it was Factor who, in 1920, began to refer to his cosmetics as "makeup" thus creating a new popular name for beauty aids.

Home sales of cosmetics began to find a market as well, particularly as women in remote areas were given the opportunity to sample products in their homes and take delivery there as well. Products sold door-to-door managed to maintain the panache of both Hollywood and exclusive salons through sophisticated marketing. Madam C.J. Walker set up a laboratory, factory, and beauty school in Indianapo-

lis, Indiana in 1910. She insisted that women who sold her products be trained and maintain a professional image. This served her well commercially, as well as serving the growing and sizeable black communities throughout the country including those in Chicago, Kansas City, and Philadelphia. The California Perfume Company—later renamed the Avon Company—also amassed a sales force of over 10,000 sales representatives by 1903. The "Avon lady," moreover, was an independent contractor, rather than a company representative, so her presence in a community over time helped create a stable market for her products.

By 1914, the value of cosmetic sales began to be noticed and measurable. As Gwen Kay notes in her new book, *Dying to Be Beautiful: The Fight for Safe Cosmetics*,[1] "Good grooming became linked with the country's economic success," and "the value of cosmetics in the larger U.S. economy became glaringly apparent when the government relied upon sales of this 'insignificant' item to raise money."[2] Congress passed a war revenue tax requiring "stamps" on proprietary medicines, cosmetics, perfumes, and other items. The tax was estimated to bring in about seven million dollars. In 1921, rather than repeal the tax, Congress imposed a "luxury" tax on all toilet goods to continue generating money from the sale of beauty products. Soap manufacturers argued that this essentially was taxing cleanliness and that it would adversely affect public health. Congress passed the luxury tax but excluded soaps.

Revelations concerning the harm caused by dangerous cosmetic ingredients received publicity in the Food and Drug Administration's Chamber of Horrors exhibits. Hair dyes containing mercury and lead, depilatories containing thallium acetate, and eyelash and brow dyes with paraphenylenediamine, all caused documented injury to consumers. In 1935, Franklin Roosevelt noted in his address to Congress that the 1906 Act required "practical improvements," including an extension of "protection to the trade in cosmetics."[3] The 1938 Act extended regulation to include cosmetics, including new labeling requirements for certain cosmetic ingredients and allowing immediate enforcement of the cosmetic provisions of the act. Soaps, however, again "slipped" away from regulation as the 1938 Act contained an explicit exemption for soaps.

[1] Gwen Kay, Dying to Be Beautiful: The Fight for Safe Cosmetics (2005).

[2] *Id.* at 40.

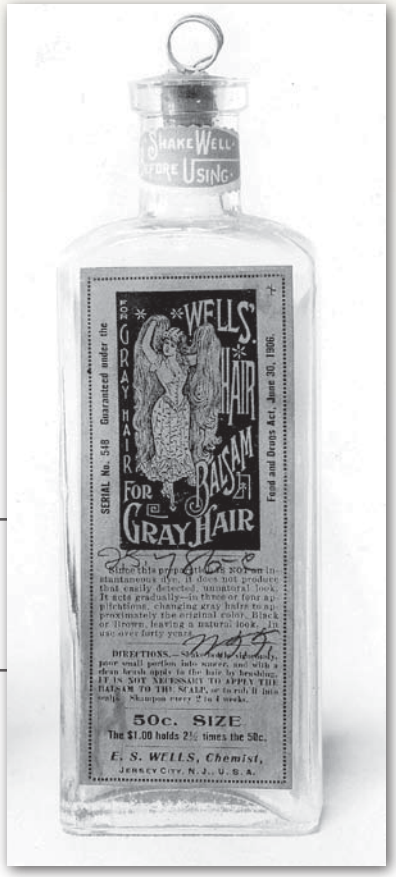
[3] 79 Cong. Rec. 4262 (1935).

71 Puck no. 1825 (Feb. 21, 1912).

Clerk to Patent Medicine Man: Here is a curious testimonial from one of our customers.

Medicine Man: Read it.

Clerk: "Before I took your elixir my face was a sight.
You ought to see it now. Send me another for my mother-in-law."



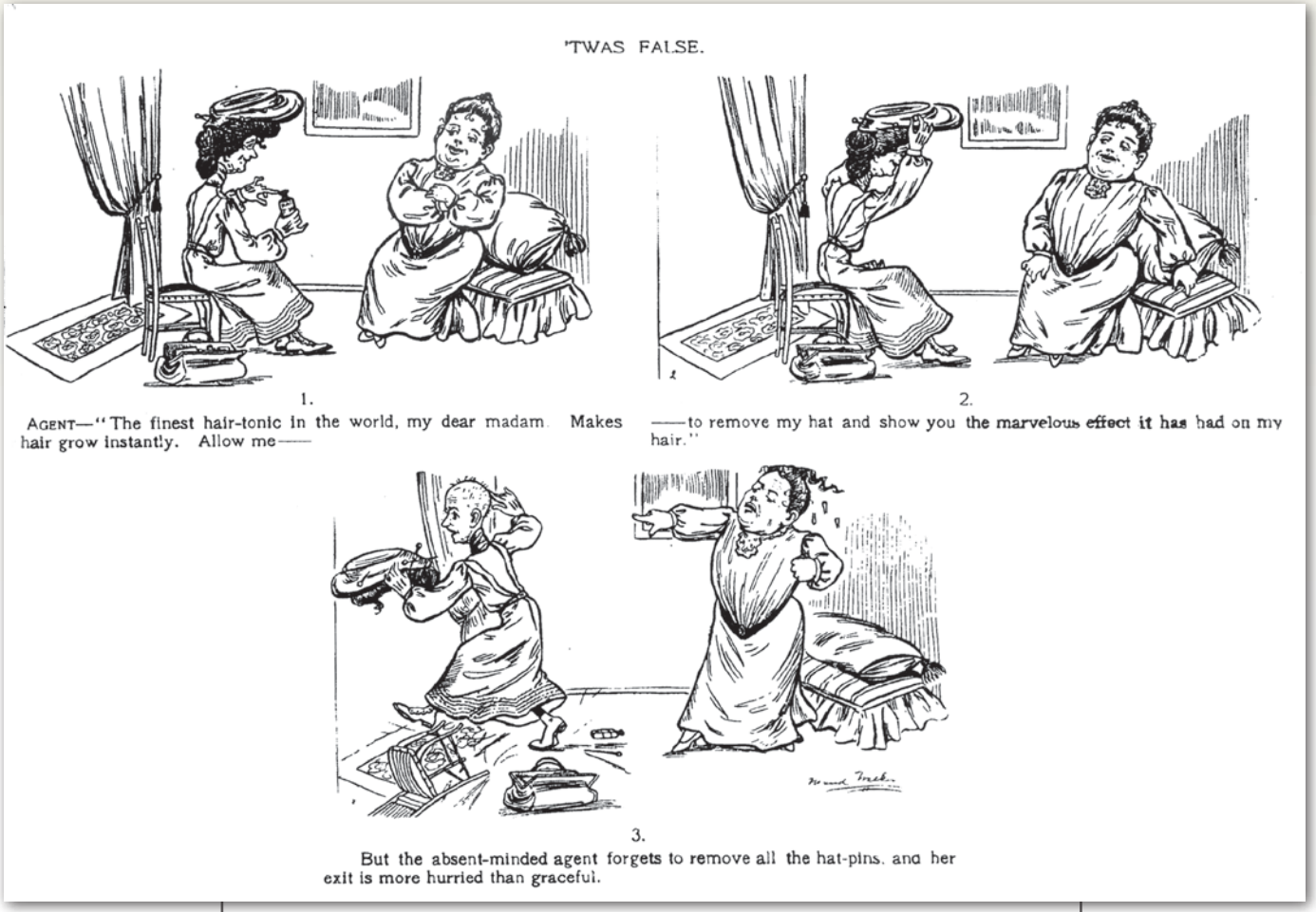
Well's Hair Color Balsam for Grey Hair (FDA History Office).—This hair dye was typical of those marketed between 1906 and 1913. The 1906 Act did not mention nor regulate cosmetic ingredients, including those found in hair dyes. The 1938 Act, however, instituted specific labeling requirements for hair and lash dyes.

"How to Be Beautiful on a Dollar a Day."
By Our Own Complexion Specialist
43 PUCK no. 1101 (Apr. 13, 1898).

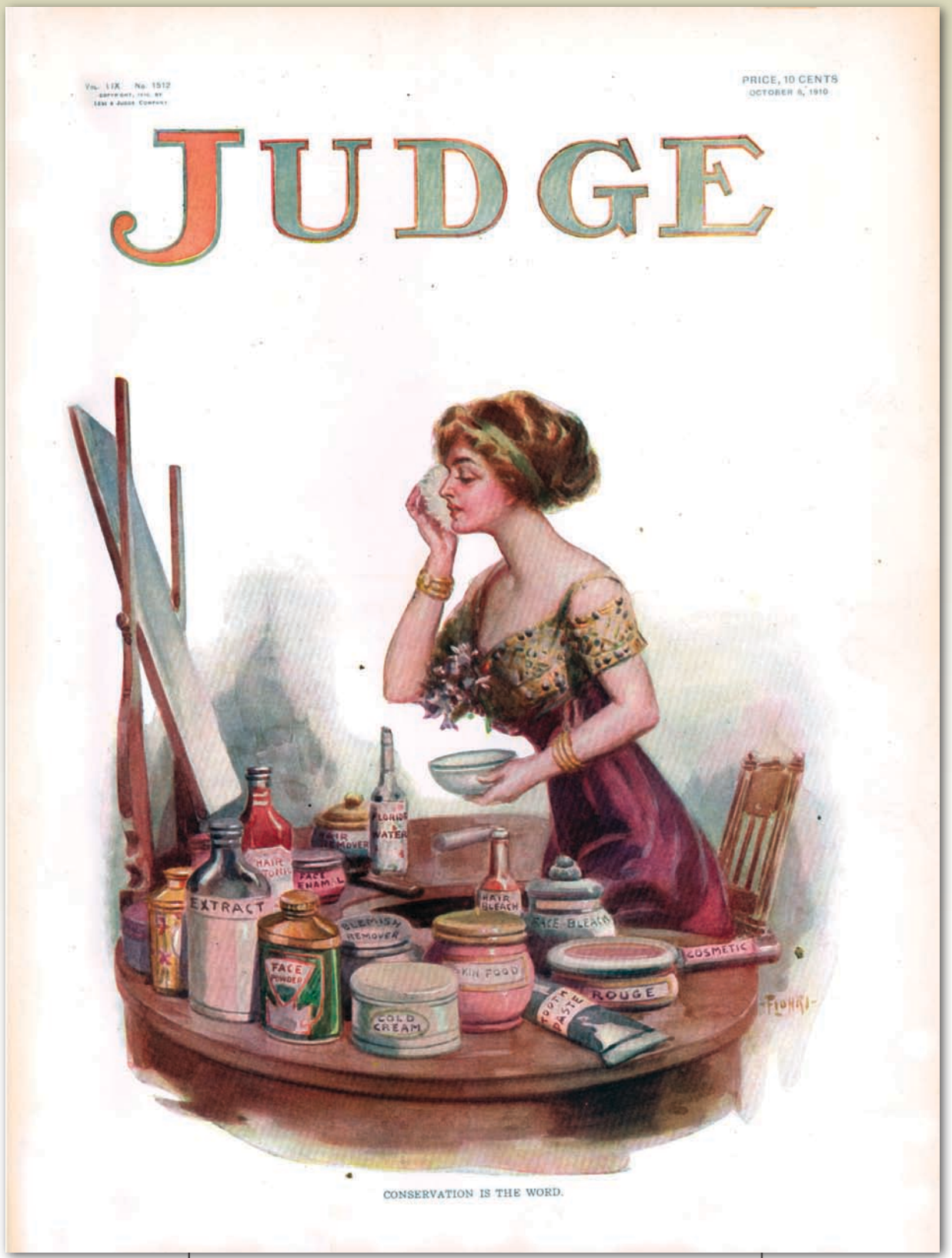
These tongue-in-cheek quips are unusual in that they refer to women of the working class rather than middle and upper class women—in this case, an Irish cook and an office worker.

Maggie Murphy—Probably your duties in the kitchen may cause the undue flush upon your face of which you complain. Try copal varnish or enameline, either of which will hide the blemishes incident to the manipulation of the culinary utensils and various other features of the domestic economy. If neither of the articles suggested are obtainable, mix equal quantities of burnt cork and Vaseline in the morning, washing off at night. If possible, have the woman of the house do the cooking.

Mamie Sweets—I do not see how acne could arise from digestional derangement, as you say you eat nothing for lunch but two ice-cream sodas, a few strawberry tarts, and a half pound of chocolate caramels. You need rest and rich food. I would advise you to stop your stenography for a month or two and build up on Frankfurters and corn beef.



"*Twas False*" (45 JUDGE no. 1153 (Nov. 21, 1903)).—Door-to-door sales of cosmetic products began as early as 1892, although there is no indication that hair dyes were sold in that fashion.



Conservation Is the Word (59 JUDGE no. 1512 (Oct. 8, 1910)).—Although not mentioned in the 1906 Pure Food and Drugs Act, cosmetics had become a $50 million business by 1915. Socially acceptable only if they remained largely "invisible," women during this period generally limited themselves to powder, cold creams, and hair dyes with perhaps a touch of rouge. Although the woman in this picture is young, an unspoken rule was that cosmetics were socially acceptable for women over 45.